

APPENDIX I CONTRACTIONS

ACCRY	Accuracy	GOES	Geostationary Operational Environmental Satellite
ACFT	Aircraft		
ADP	Automated Data Processing	HATTRACK	Hurricane and Typhoon Tracking (Steering) Program
AFGWC	Air Force Global Weather Central	HGT	Height
AIREP	Aircraft Weather Report(s) (Commerical and Military)	HPAC	Mean of XTRP and CLIM Techniques (Half Persistence and Climatology)
ANT	Antenna	HR	Hour(s)
AOR	Area of Responsibility	HVY	Heavy
APRNT	Apparent	ICAO	International Civil Aviation Organization
APT	Automatic Picture Transmission	INIT	Initial
ARWO	Aerial Reconnaissance Weather Officer	INJAH	North Indian Ocean Component of TYAN
ATT	Attenuation	INST	Instruction
AVG	Average	IR	Infrared
AWN	Automated Weather Network	KM	Kilometer(s)
BPAC	Blended Persistence and Climatology	KM/HR	Kilometer(s) per Hour
BRG	Bearing	KT	Knot(s)
CDO	Central Dense Overcast	LLCC	Low-level Circulation Center
CI	Cirriform Cloud or Cirrus also Current Intensity (Dvorak)	LVL	Level
CINCPAC	Commander-in-Chief Pacific AF - Air Force, FLT - Fleet (Navy)	M	Meter(s)
CLD	Cloud	M/SEC	Meter(s) per Second
CLIM	Climatology	MAX	Maximum
CLSD	Closed	MB	Millibar(s)
CM	Centimeter	MET	Meteorological
CNTR	Center	MIN	Minimum
CPA	Closest Point of Approach	MOHATT	Modified HATTRACK
CSC	Cloud System Center	MOVG	Moving
CYCLOPS	Tropical Cyclone Steering Program (HATTRACK and MOHATT)	MSLP	Minimum Sea Level Pressure
DEG	Degree(s)	MSN	Mission
DIAM	Diameter	NAV	Navigational
DIR	Direction	NEDN	Naval Environmental Data Network
DMSP	Defense Meteorological Satellite Program	NEDS	Naval Environmental Display Station
EL	Elongated	NEPRF	Naval Environmental Prediction Research Facility
ELEV	Elevation	NESS	National Environmental Satellite Service
EXP	Exposed	NET	Near Equatorial Trough
FI	Forecast Intensity (Dvorak)	NM	Nautical Mile(s)
FLT	Flight	N/O	Not Observed
FNOC	Fleet Numerical Oceanography Center	NOAA	National Oceanic and Atmospheric Administration
FT	Feet (Foot)	NOCC	Naval Oceanography Command Center
GMT	Greenwich Mean Time	NWOC	Naval Western Oceanography Center

NR	Number	TC	Tropical Cyclone
NRL	Naval Research Laboratory	TCARC	Tropical Cyclone Aircraft Reconnaissance Coordinator
NTCM	Nested Tropical Cyclone Model	TCFA	Tropical Cyclone Formation Alert
OBS	Observation(s)	TCM	Tropical Cyclone Model
OTCM	One-way (Interactive) Tropical Cyclone Model	TD	Tropical Depression
PACOM	Pacific Command	TDO	Typhoon Duty Officer
PCN	Position Code Number	TIROS	Television Infrared Observation Satellite
PSBL	Possible	TS	Tropical Storm
PTLY	Partly	TY	Typhoon
QUAD	Quadrant	TYAN	Typhoon Analog Program
RADOB	Radar Observation(s)	TYFN	Western North Pacific Component (Revised) of TYAN
RECON	Reconnaissance	TUTT	Tropical Upper-Tropospheric Trough
RNG	Range	ULAC	Upper-level Anticyclone
RT	Right	VEL	Velocity
SAT	Satellite	VIS	Visual
SFC	Surface	VSBL	Visible
SLP	Sea Level Pressure	WESTPAC	Western (North) Pacific
SPOL	Spiral Overlay	WMO	World Meteorological Organization
SRP	Selective Reconnaissance Program	WND	Wind
STNRY	Stationary	WRNG(S)	Warnings
SST	Sea Surface Temperature	WRS	Weather Reconnaissance Squadron
ST	Subtropical	XTRP	Extrapolation
STR	Subtropical Ridge	Z	Zulu Time (Greenwich Mean Time)
STY	Super Typhoon		
TAPT	Typhoon Acceleration Prediction Technique		

APPENDIX II

DEFINITIONS

BEST TRACK - A subjectively smoothed path, versus a precise and very erratic fix-to-fix path, used to represent tropical cyclone movement.

CENTER - The vertical axis or core of a tropical cyclone. Usually determined by wind, temperature, and/or pressure distribution.

CYCLONE - A closed atmospheric circulation rotating about an area of low pressure (counterclockwise in the Northern Hemisphere).

EPHEMERIS - Position of a body (satellite) on space as a function of time; used for gridding satellite imagery. Since ephemeris gridding is based solely on the predicted position of the satellite, it is susceptible to errors from vehicle pitch, orbital eccentricity, and the oblateness of the earth.

EXPLOSIVE DEEPENING - A decrease in the minimum sea level pressure of a tropical cyclone of 2.5 mb/hr for 12 hrs or 5.0 mb/hr for six hrs (ATR 1971).

EXTRATROPICAL - A term used in warnings and tropical summaries to indicate that a cyclone has lost its "tropical" characteristics. The term implies both poleward displacement from the tropics and the conversion of the cyclone's primary energy sources from release of latent heat of condensation to baroclinic processes. The term carries no implications as to strength or size.

EYE - "EYE" is used to describe the central area of a tropical cyclone when it is more than half surrounded by wall cloud.

FUJIWHARA EFFECT - An interaction in which tropical cyclones within about 700 nm (1296 km) of each other begin to rotate about one another. When intense tropical cyclones are within about 400 nm (741 km) of each other, they may also begin to move closer to each other.

MAXIMUM SUSTAINED WIND - Maximum surface wind speed averaged over a one-minute period of time. Peak gusts over water average 20 to 25 percent higher than sustained winds.

RAPID DEEPENING - A decrease in the minimum sea level pressure of a tropical cyclone of 1.25 mb/hr for 24 hrs (ATR 1971).

RECURVATURE - The turning of a tropical cyclone from an initial path toward the west or northwest to a path toward the northeast.

RIGHT ANGLE ERROR - The distance described by a perpendicular line from the best track to a forecast position. (See Figure 4-1).

SIGNIFICANT TROPICAL CYCLONE - A tropical cyclone becomes "significant" with the issuance of the first numbered warning by the responsible warning agency.

SUPER TYPHOON/HURRICANE - A typhoon/hurricane in which the maximum sustained surface wind (one-minute mean) is 130 kt (67 m/sec) or greater.

TROPICAL CYCLONE - A non-frontal low pressure system of synoptic scale developing over tropical or subtropical waters and having a definite organized circulation.

TROPICAL CYCLONE AIRCRAFT RECONNAISSANCE COORDINATOR - A CINCPACAF representative designated to levy tropical cyclone aircraft weather reconnaissance requirements on reconnaissance units within a designated area of the PACOM and to function as coordinator between CINCPACAF, aircraft weather reconnaissance units, and the appropriate typhoon/hurricane warning center.

TROPICAL DEPRESSION - A tropical cyclone in which the maximum sustained surface wind (one-minute mean) is 33 kt (17 m/sec) or less.

TROPICAL DISTURBANCE - A discrete system of apparently organized convection--generally 100 to 300 nm (185 to 556 km) in diameter--originating in the tropics or subtropics, having a non-frontal migratory character, and having maintained its identity for 24 hours or more. It may or may not be associated with a detectable perturbation of the wind field. As such, it is the basic generic designation which, in successive stages of intensification, may be classified as a tropical depression, tropical storm or typhoon (hurricane).

TROPICAL STORM - A tropical cyclone with maximum sustained surface winds (one-minute mean) in the range of 34 to 63 kt (17 to 32 m/sec) inclusive.

TROPICAL UPPER-TROPOSPHERIC TROUGH (TUTT) - "A dominant climatological system, and a daily synoptic feature, of the summer season over the tropical North Atlantic, North Pacific and South Pacific Oceans," from - Sadler, J.C., Feb. 1976: Tropical Cyclone Initiation by the Tropical Upper-Tropospheric Trough (NAVENVPREDRSCHFAC Technical Paper No. 2-76).

TYPHOON/HURRICANE - A tropical cyclone in which the maximum sustained surface wind (one-minute mean) is 64 kt (33 m/sec) or greater. West of 180 degrees longitude they are called typhoons and east of 180 degrees they are called hurricanes. Foreign governments use these or other terms for tropical cyclones and may apply different intensity criteria.

VECTOR ERROR - The distance described by a straight line from the forecast position to the position at verification time as found on the best track. (See Figure 4-1).

WALL CLOUD - A organized band of cumuliiform clouds immediately surrounding the central area of a tropical cyclone. The wall cloud may entirely enclose or only partially surround the center.

APPENDIX III **NAMES FOR TROPICAL CYCLONES**

<u>Column 1</u>	<u>Column 2</u>	<u>Column 3</u>	<u>Column 4</u>
ANDY	ABBY	ALEX	AGNES
BESS	BEN	BETTY	BILL
CECIL	CARMEN	CARY	CLARA
DOT	DOM	DINAH	DOYLE
ELLIS	ELLEN	ED	ELSIE
FAYE	FORREST	FREDA	FABIAN
GORDON	GEORGIA	GERALD	GAY
HOPE	HERBERT	HOLLY	HAZEN
IRVING	IDA	IKE	IRMA
JUDY	JOE	JUNE	JEFF
KEN	KIM	KELLY	KIT
LOLA	LEX	LYNN	LEE
MAC	MARGE	MAURY	MAMIE
NANCY	NORRIS	NINA	NELSON
OWEN	ORCHID	OGDEN	ODESSA
PAMELA	PERCY	PHYLLIS	PAT
ROGER	RUTH	ROY	RUBY
SARAH	SPERRY	SUSAN	SKIP
TIP	THELMA	THAD	TESS
VERA	VERNON	VANESSA	VAL
WAYNE	WYNNE	WARREN	WINONA

NOTE:

Names are assigned in rotation, alphabetically. When last name (WINONA) has been used, the sequence will begin again with "ANDY."

Source: USCINCPACINST 3140.1 (series)

APPENDIX IV

REFERENCES

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- Dunnavan, G. M., 1981: Forecasting Intense Tropical Cyclones Using 700 MB Equivalent Potential Temperature and Central Sea Level Pressure. NAVOCEANCOMCNE/JTWC TECH NOTE: JTWC 81-1, 12 pp.
- Dvorak, V. F., 1973: A Technique for the Analysis and Forecasting of Tropical Cyclone Intensities from Satellite Pictures. NOAA Technical Memorandum NESS 45, 19 pp.
- Holland, G. J., 1980: An Analytic Model of the Wind and Pressure Profiles in Hurricanes. Monthly Weather Review, Vol. 108, No. 8, pp. 1212-1218.
- Sikora, C. R., 1976: An Investigation of Equivalent Potential Temperature as a Measure of Tropical Cyclone Intensity. FLEWEACEN TECH NOTE: JTWC 76-3, 12 pp.
- Weir, R. C., 1982: Predicting the Acceleration of Northward-moving Tropical Cyclones Using Upper-Tropospheric Winds. NAVOCEANCOMCEN/JTWC TECH NOTE: NOCC/JTWC 82-2.

APPENDIX V
PAST ANNUAL TYPHOON/TROPICAL CYCLONE REPORTS

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Annual publication summarizing the tropical cyclone season in the western North Pacific, Bay of Bengal and Arabian Sea. A brief narrative is given on each significant tropical cyclone including its best track. All reconnaissance data used to construct the best tracks are provided. Forecast verification data and statistics for the JTWC are summarized. Research efforts at the JTWC and recent NOCC/JTWC publications are briefly discussed.		

Block 19, (Continued)

Dynamic tropical cyclone models
Typhoon analog model
Tropical cyclone steering model
Climatology/persistence techniques

